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ISR All-Hands

Physics Auditorium



Angela Mielke

July 20, 2017



Operated by Los Alamos National Security, LLC for the U.S. Department of Energy's NNSA

Agenda



- **Welcome - Angela Mielke**
- **Safety/Security Share- Hannah Cross**
- **ISR Highlights – Angela Mielke**
- **Director’s Message – Angela Mielke**
- **Future/Where are we going/What are we doing? – Angela Mielke**
- **Q/A**

SAFETY SHARE – BE BEAR SMART

Hannah Cross, ADTIR WSSET Co-Chair

Minimizing Human-Bear Encounters

- *Seven reported bear encounters at LANL in 2016.*
- **Package waste to reduce odors.**
- **Take food waste home for disposal.**
- **Don't feed wildlife outside buildings (bird feeders).**
- **Use bear-proof dumpsters correctly.**



Bear-Proof Dumpsters

- ISR has two of these dumpsters for our areas.
- How to use:
 1. Both sets of doors are shut.
 2. All carabiners are clipped.
 3. Lock bar is slid fully in place.



Recent Encounter

- A mother bear and two cubs entered unsecured bear-proof dumpster at TA-35.
- The mother exited, and the cubs were trapped inside.
- Very dangerous situation - Responders had to rescue the two cubs while keeping the irate mother bear at bay.



Encountering a Nuisance Bear:

- **Report location to the Emergency Operations Center**
 - 7-6211
 - bears@lanl.gov

Encountering an Aggressive Bear:

- Stay calm, talk in a low voice, and back away slowly.
- Don't run.
- Watch for cubs.
- If approached, arm yourself, throw rocks or sticks, speak loudly in a firm voice, and raise your arms to look bigger.
- If attacked, fight back.
- When safe, call the Emergency Operations Center or 911 if medical attention is needed.

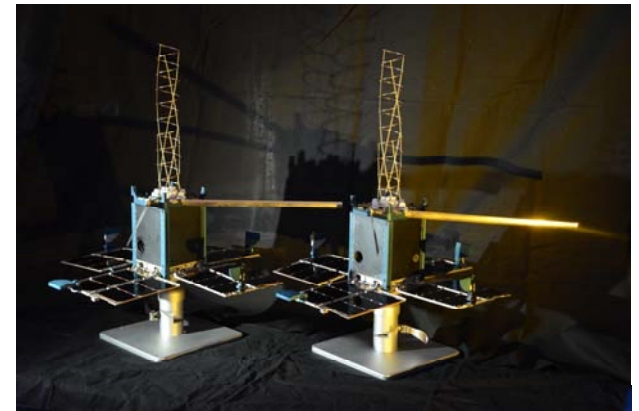
Contacts

- **Questions about dumpsters?**
 - Jack Caldwell, 5-3666
- **Questions about wildlife?**
 - Chuck Hathcock, 5-3366

ISR Highlights

- **USNDS –**

- Successfully delivered EMP Flight Unit 7 for GPS III. Flight Unit 8 (the last of its generation) will be delivered this quarter.
- Successfully delivered two CXD Flight Units (FU7&FU8) for GPS III
- SABRS and SENSER are nearing completion on integration and test, on target for June 2018 delivery
- Imminent release and accreditation of DIORAMA 1.5



- **Agile Space**

- Gunsmoke J – 3U Cubesat development will host it's Preliminary Design Review in late September
- Delivered our 15th and 16th ISR cubesats on the Prometheus project

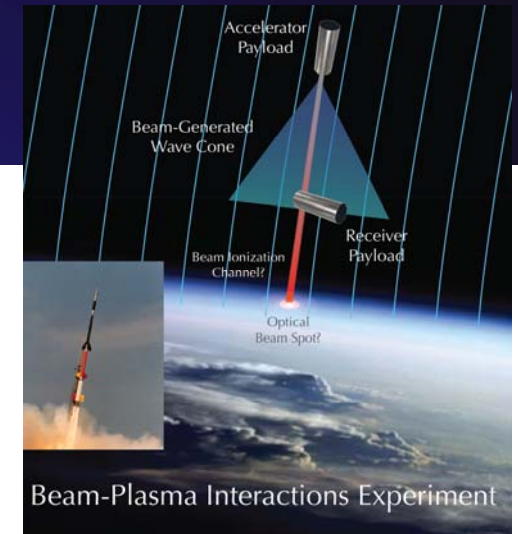
- **Weapons**

- The ISR sensor technology is now included in the Joint Test Asset program



ISR Highlights

- **NASA/LDRD**
 - SHIELDS nomination for R&D100
 - 6+ Large NASA Proposals in the 'works'
 - VICI/MMX/LCAS/CONNEX/IMAP

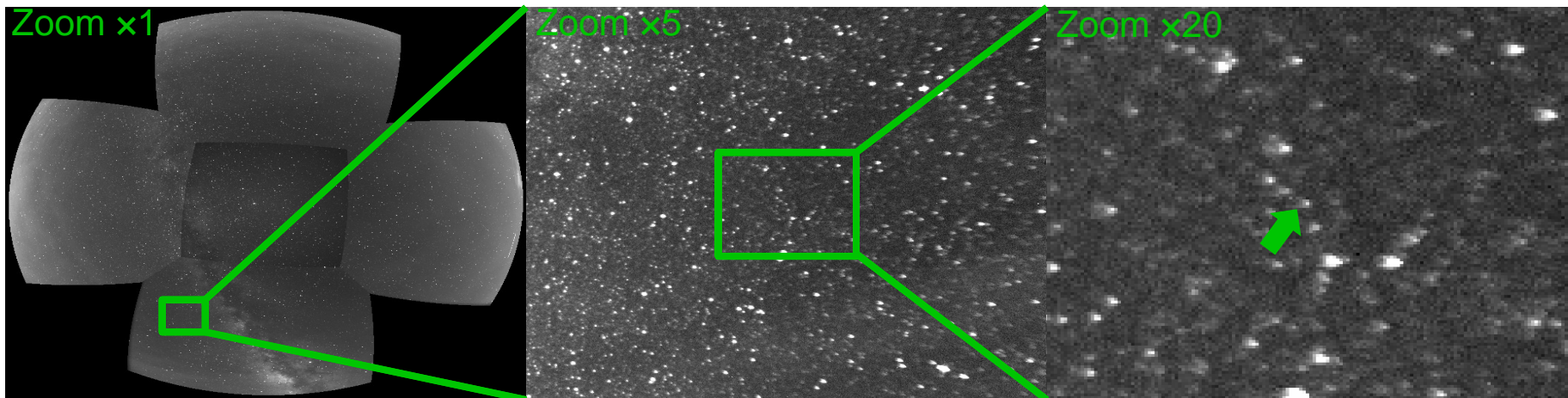
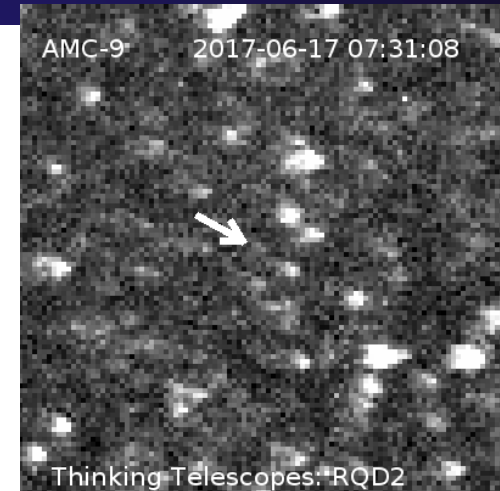


		Project #	PI	Group	Title
New Projects	Exploratory Research	20180449ER	Mike Henderson	ISR-1	Next Generation Models for Radial Diffusion of Energetic Electrons in the Earth's Radiation Belts
		20180244ER	Roger Wiens	ISR-2	OrganiCam: A High-Sensitivity Radiation-Hardened Imaging Organic Detector For Space and Programmatic Applications
		20180257ER	Tom Vestrand	ISR-2	Ultra-Diffuse Galaxies, Tidal Streams and Dwarf Galaxies: The Low-Surface Brightness Frontier
		20170538ER	Joseph Palmer	ISR-4	Ignis: A Cognitive RF Sensing LPDI Modem
		20170583ER	Zach Baker	CCS-7	Coherent Radio Frequency Collection Through Computation for CubeSat Constellations
FY17 Projects	Directed Research	20150033DR	Vania Jordanova	ISR-1	SHIELDS: Space Hazards Induced near Earth by Large Dynamic Storms - Understanding, Modeling, Predicting
		20170047DR	Mike Henderson	ISR-1	Impacts of Extreme Space Weather Events on Power Grid Infrastructure: Physics-Based Modelling of Geomagnetically-Induced Currents (GICs) During Carrington-Class Geomagnetic Storms
		20170055DR	Steve Love	ISR-2	Agile Spectral Reconnaissance from CubeSats
	Exploratory Research	20150127ER	Steve Morley	ISR-1	Mapping Relativistic Electron Precipitation: Where and When?
		20160440ER	Herb Funsten	ISR-1	Time-of-Flight Ion Mass Spectrometer Subsystem for Space and Planetary Missions
		20170179ER	Xuan-Min Shao	ISR-2	High Energy Lightning: Understanding Relations Between Energetic Particles and Lightning Discharges in Thunderclouds
		20170183ER	Przemek Wozniak	ISR-2	Next Generation Image Processing and Analysis Algorithms for Persistent Sky Surveillance
	Early Career	20160606ECR	Nina Lanza	ISR-2	Discovering Biosignatures in Manganese Deposits on Mars
	Postdoc	20160650PRD2	Roger Wiens	ISR-2	Trace Elements in Martian Rocks and Soils as Observed by ChemCam in Gale Crater, Mars, and Preparation for LANL's Next Mars Mission

ISR Highlights - Emerging Programs

Satellite anomaly observed in real time

- Serendipitous detection of a bright optical flash by RQD2 all-sky monitoring telescope as part of the ongoing Thinking Telescopes technology demos for U.S. Gov
- Coincides with the breakup of AMC-9, a European communications satellite at GEO, on June 17, 2017
- Showcased some of the unique ISR capabilities in the area of Space Situational Awareness



Public Relations/Releases for ISR

- **News Releases:**
- **Rover findings indicated stratified lake (News release) – June 2017**
 - <http://www.lanl.gov/discover/news-release-archive/2017/June/0601-rover-findings-indicate-stratified-lake.php>
- **Halos discovered on Mars widen time frame for potential life (News release) – May 2017**
 - <http://www.lanl.gov/discover/news-release-archive/2017/May/0530-halos-discovered-on-mars.php>
- **Less radiation in inner Van Allen belt than previously believed (News release) – March 2017**
 - <http://www.lanl.gov/discover/news-release-archive/2017/March/03.20-less-radiation-in-van-allen-belt.php>
- **First-ever GPS data release to boost space-weather science (News release) – January 2017**
 - <http://www.lanl.gov/discover/news-release-archive/2017/January/01.30-space-weather-science.php>
- **First detection of boron on the surface of Mars (News release) – December 2016**
 - <http://www.lanl.gov/discover/news-release-archive/2016/December/12.13-first-detection-of-boron.php>
- **Mars rover's laser can now target rocks all by itself (News release) – July 2016**
 - <http://www.lanl.gov/discover/news-release-archive/2016/July/07.21-mars-rovers-lasers.php>

Public Relations/Releases for ISR

- **Science Blogs/Columns:**

- **Eye on the Sky at Los Alamos – By Spencer Johnson (Santa Fe New Mexican) – July 2017**
 - http://www.santafenewmexican.com/news/health_and_science/keeping-an-eye-on-the-sky-at-los-alamos/article_c64b6b83-a0f6-515f-b986-66b4dd59a68c.html
- **What Martian ‘halos’ tell us about habitability – By Jens Frydenvang (NatGeo blog) – June 2017**
 - <http://voices.nationalgeographic.com/2017/06/28/what-martian-halos-tell-us-about-habitability/>
- **Unraveling the Mysteries of Lightning – By Tess Light (NatGeo blog, Santa Fe New Mexican, HuffPo blog) – May 2017 and June 2017**
 - <https://voices.nationalgeographic.com/2017/05/02/unraveling-the-mysteries-of-lightning/>
 - http://www.santafenewmexican.com/news/health_and_science/science-on-the-hill-striking-back-at-mysteries-of-lightning/article_3d21a070-b9e4-508d-bf28-ad4cb7f3c8f0.html
 - http://www.huffingtonpost.com/entry/unraveling-the-mysteries-of-lightning_us_59494c1de4b09edb4c91f2d5
- **Can our grid withstand a solar storm? – By Jesse Woodroffe and Michael Rivera (Santa Fe New Mexican; HuffPo blog) – February 2017 and March 2017**
 - http://www.santafenewmexican.com/news/health_and_science/science-on-the-hill-protecting-grid-from-cataclysmic-solar-storm/article_d0cc5d0a-c0c7-5b1e-b7c8-4b408b61cc3b.html
 - http://www.huffingtonpost.com/entry/can-our-grid-withstand-a-solar-storm_us_58d13ca3e4b0537abd9574d9
- **Confessions of a Martian rock – By Nina Lanza (Discover blog) – July 2016**
 - <http://blogs.discovermagazine.com/crux/2016/07/25/confessions-of-a-martian-rock/#.WWjdxl7r0W6>

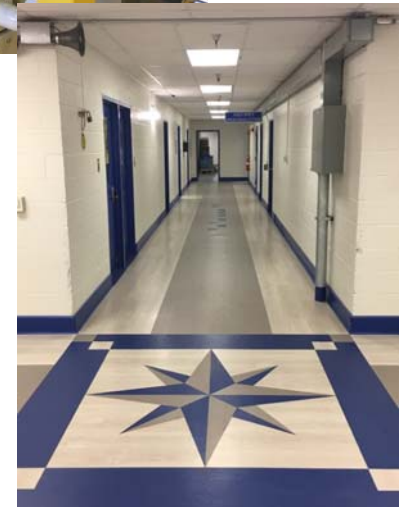
Public Relations/Releases for ISR

- **Videos**

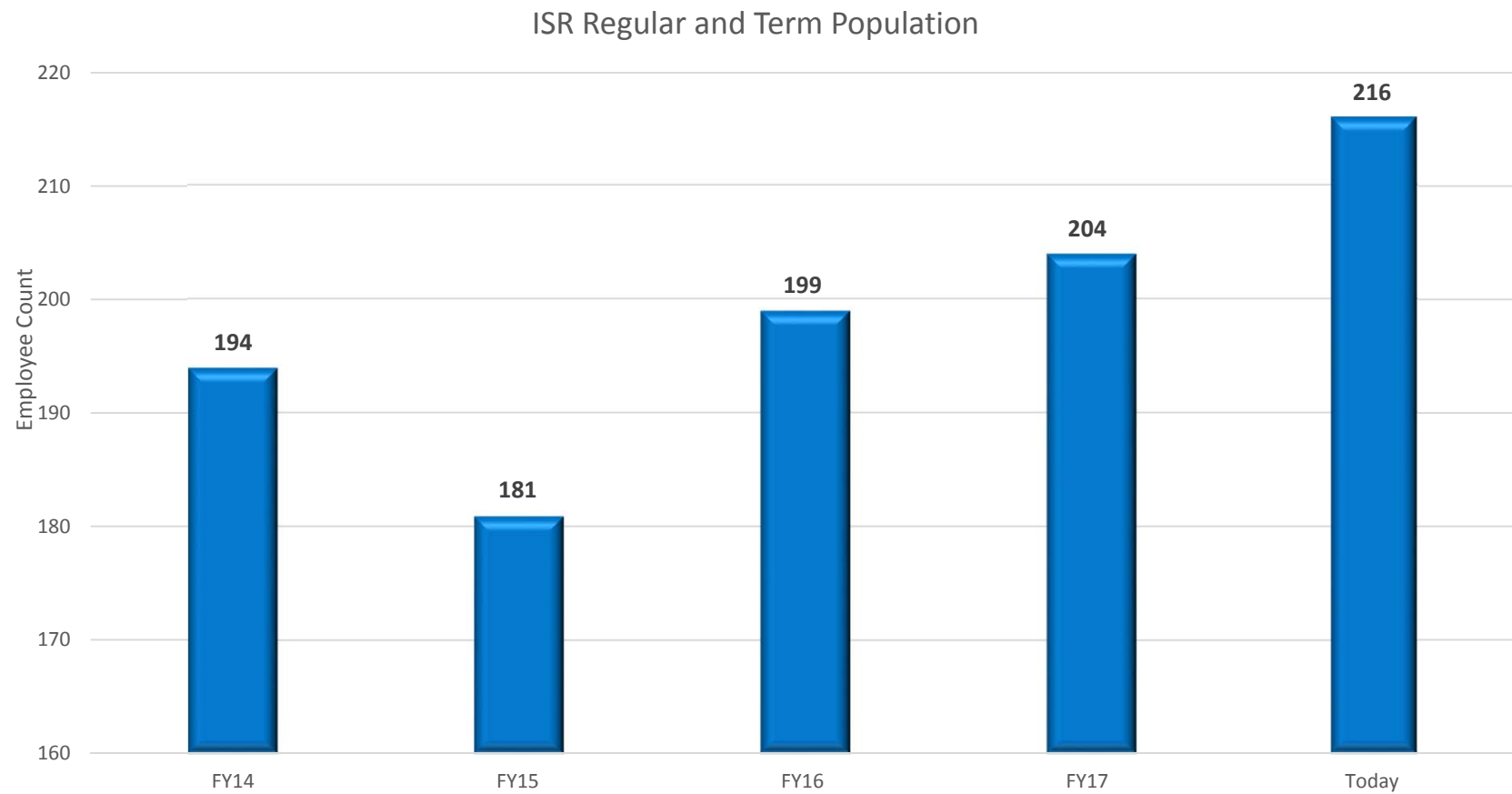
- What initiates lightning (video) – May 2017
 - <https://www.youtube.com/watch?v=63PRuaNelW/>
- Halos on Mars could mean a longer life-friendly past (video) – May 2017
 - https://www.youtube.com/watch?v=CwN-tN9H_d8
- The perils of space weather (video) – April 2017
 - <https://www.youtube.com/watch?v=FsKQWvTZK-Y>
- Weathering the Worst of Solar Storms (video) – March 2017
 - <https://www.youtube.com/watch?v=dWi3eDLLeg4>
- Space weather data drop (video) – January 2017
 - <https://www.youtube.com/watch?v=sgnUWsluj3s>
- Boron Discovered in Ancient Habitable Mars Groundwater (video) – December 2016
 - <https://www.youtube.com/watch?v=D29hjfiSHzc>
- Manganese oxides on Mars (video) – July 2016
 - <https://www.youtube.com/watch?v=oayVInNUq8w>
- Eye on the Sky(video) – July 2017
 - <https://youtu.be/KXiC5vBaVGo>

Infrastructure Investments

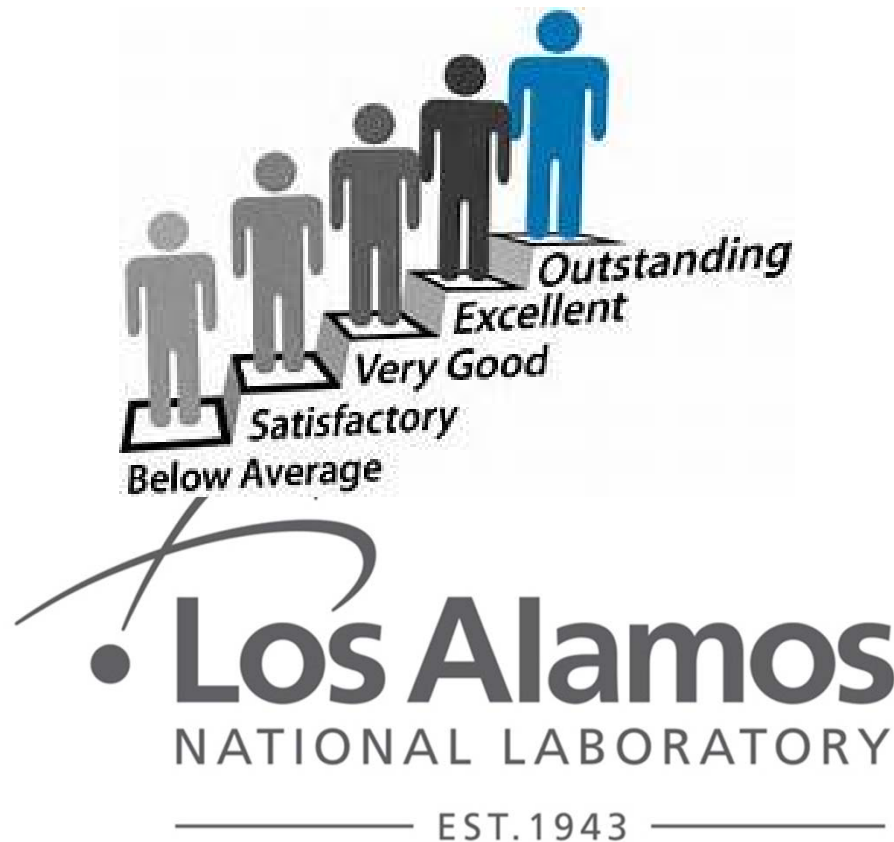
- **RP Instruments – Dosimeters for the SM40 Labs**
- **Machine Shop Rehab (year 2)**
- **502 Cell Repeater**
- **Various conference room upgrades**
 - HASM, MASSEY
- **Project Leader Training**
- **Moon Room VTC Upgrades**
- **Clean up of NISC Lab Spaces- Additional storage**
- **Band Saw Purchase**
- **Partial funding of some upgrades at Fenton Hill (Comm Shed and IT work)**



Hiring



The five basic principles of human performance are:



- People are fallible, and even the best people make mistakes
- Error-likely situations are predictable, manageable, and preventable
- Individual behavior is influenced by organizational processes and values
- People achieve high levels of performance based largely on the encouragement and reinforcement received from leaders, peers, and subordinates
- Events can be avoided through an understanding of the reasons mistakes occur and application of the lessons learned from past events (or errors)

Resources Available for all Employees

- **Employee Assistance Program Provides**

- **Counseling in areas such as:**

- Personal and workplace difficulties
 - Alcohol misuse
 - Substance misuse
 - Bereavement and grief
 - Relationships & interpersonal skills
 - Stress management
 - Veterans issues
 - Referrals to outside counseling & treatment

- **Crisis intervention**
 - **Management consultations**
 - **Biofeedback & Relaxation techniques**
 - **Interpersonal skill building assistance**
 - **Tobacco Cessation Program**
 - **Educational presentations**



Resources Available for all Employees



- **Ombuds services:**
 - Provide a safe place for individuals to engage in informal and confidential conversations
 - Coach and assist individuals to reframe challenges and evaluate options
 - Offer neutral, informal mediation and facilitation between parties in conflict
 - Help visitors explore options and refer to appropriate resources and policy
 - Deliver communication skills training through educational presentations and workshops
 - Offers trainings
 - Mediation services

Moving Forward

- **Evaluating where we are – what are our strengths and areas for improvement?**
 - Agile Space Review
 - Health of ISR LDRD Review
 - Increasing Training Opportunities
 - Health of ISR's Integrated Budget Review
 - NASA Goals
 - Maintain 2 NASA Instrumentation Efforts at all times
 - Hosting an ISR USNDS Strategic Planning Exercise facilitated by UC Berkeley in the Fall
 - The AD's office is committed to have a permanent Division Leader in place before the contract transition occurs.
 - ...

Questions

